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IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Attorney Docket No. 017661/0181

Applicant: **Takashi NAKAGAWA**

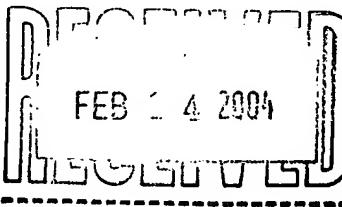
Title: **SIGNAL TRANSMISSION DEVICE OF BASE STATION AND CDMA
MOVABLE COMMUNICATION SYSTEM USING SAME**

Serial No. **10/048,059**

Filed: **June 6, 2002**

Examiner: **Unassigned**

Art Unit: **2681**



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**INFORMATION DISCLOSURE STATEMENT
UNDER 37 CFR §1.56 and 37 CFR §1.97**

Commissioner for Patents
P.O. Box 1450
Alexandria, Virginia 22313-1450

Sir:

Submitted herewith on Form PTO-SB08 is a list of documents known to Applicant in order to comply with Applicant's duty of disclosure pursuant to 37 CFR 1.56. A copy of each listed document is being submitted to comply with the provisions of 37 CFR 1.97 and 1.98.

The submission of any document herewith, which is not a statutory bar, is not intended as an admission that such document constitutes prior art against the claims of the present application or that such document is considered material to patentability as defined in 37 CFR §1.56(b). Applicant does not waive any rights to take any action which would be appropriate to antedate or otherwise remove as a competent reference any documents which is determined to be a prima facie prior art reference against the claims of the present application.

TIMING OF THE DISCLOSURE

The instant Information Disclosure Statement is believed to be filed in accordance with 37 C.F.R. 1.97(b), prior to the mailing date of a first Office Action on the merits (first scenario). If that is not the case, such as in a second scenario in which a first Office Action on the merits has been mailed before the filing of the instant Information Disclosure Statement, then either a certification or fee is required, and a certification is provided below. If neither of the first or second scenarios is the case, such as if a final Office Action or a notice of allowance has been mailed by the PTO (third scenario), then both a certification and fee are required, and in that case a certification is provided below and also the PTO is authorized to obtain the necessary fee to have the instant IDS considered, from Foley & Lardner Deposit Account #19-0741.

CERTIFICATION

The undersigned hereby certifies in accordance with 37 C.F.R. §1.97(e)(1) that each item of information contained in this Information Disclosure Statement was first cited in a communication from a foreign patent office in a counterpart foreign application not more than three (3) months prior to the filing of this Statement.

RELEVANCE OF EACH DOCUMENT

A portion of a European Office Action that issued November 25, 2003 with respect to a counterpart European patent application is provided below.

“1. The following documents D1 to D4 are referred to in this communication, the rest of the procedure.

DI: WO 97 09794 A (QUALCOMM INC) 13 March 1997 (1997-03-13)

D2: US-A-5 606 285 (WANG HEFENG ET AL) 25 February 1997 (1997-02-25)

D3: US-A-S 930 242 (MIMURA VUKIE) 27 July 1999 (1999-07-27)

D4: EP-A-0 751 630 (NIPPON ELECTRIC CO) 2 January
1997 (1997-01-02)

2. The present application does not meet the requirements of Article 52(1) EPC, because the subject-matter of independent claim 1 is not inventive in the sense of Article 56 EPC.

2.1 Document D1 (the references in parentheses applying to this document) discloses as in claim 1:

A transmission device of base station (*see page 9, line 13-2 1*) which is used for a "movable" (=mobile) communication system using a direct spread CDMA system (*see page 9, line 30-32*), in which spread signal transmission data of all transmission channels are additively combined with each other (*see page 7, line 33-36 and Figure 3*), to amplify a power of the modulation output signal by a transmission amplification means (see page 19, line 20-22, Figure 3 and Figure 6), and to transmit waves as a down-link transmitting output after power amplification,

said device having a variable attenuation means capable of controlling a level attenuation amount of the modulation output signal in an input side of the transmission amplification means (see page 19, line 18-22 and Figure 6), the input of the transmission amplification means being controlled so that it is not over a limited value by comparing a value of the amplitude data with a predetermined maximum data to increase the level attenuation amount of the variable attenuation means in accordance with such degree that the value of the amplitude data is below the maximum data (see page 8, line 2-13, page 35, line 3-6 and Figure 6), whereby the breakage of the transmission amplifier which is caused by the input of overpower and the distortion of the transmission spectrum can be prevented even during the down-link control of transmission power.

The additional features of claim 1, namely digitally combining channel signals, converting the result from the digital to the analog domain by DA-converters and mixing the analog base band signal to RF by a modulator in base station transmitters, relate to an obvious context which can be found e.g. in D4.

The subject-matter of claim us also not inventive in the light of D2 (see passages cited in the European search report).

3. The application does not meet the requirements of Article 84 EFC, because the meaning of the sentence "value of the amplitude data is over the maximum data" in line 20-2 1 of claim 1 is not clear. From the context of the claim it is assumed that "over~ should be replaced by "under".
4. The subject-matter of claim 4 does not involve an inventive step over the disclosure of document D1 combined with that of D2 (Article 56 EPC).

4.1 Document D1 (the references in parentheses applying to this document) discloses as in claim 4:

An apparatus for controlling the transmission power of a base station having a transmitter in which spread signal transmission data of all transmission channels are additively combined (see page 7, line 33-36 and Figure 3) and a transmission amplification means (see page 19, line 20-22, Figure 3 and Figure 6) which amplifies a power of the modulation output signal to transmit waves as a transmission output to a "movable" (=mobile) station said apparatus comprising:

a variable attenuation means capable of controlling an attenuation amount of the modulation output signal level in accordance with a value of control signal to the input (see page 19, line 18-20 and Figure 6);

a transmission power inspecting means inspecting the level of the transmitter output to the electric power amplification means and outputting a corresponding digital value as a transmission power data (page 8, line 1-2, page 10, line 16-18, Fig. 2 and Fig. 3);

a first mean value-calculating means calculating a mean value of the amplitude data per a predetermined time provided by the additive composite means and making it a transmission mean value which shows a mean value of the transmission power level to be required (see page 13, line 1-8 and Figure 5); a second mean value-calculating means calculating a mean value of the transmission power data per a predetermined time provided by the transmission power inspecting means and making it a transmission power mean value which shows a mean value of the actual

transmission power (see page 10, line 6-9 and Figures 2,3);

and a comparative control means outputting a data for supplementing, as the control signal to the valuable attenuation means, a difference between the transmission mean value and the transmission power mean value provided by second mean value-calculating means (page 10, line 8-9, page 18, line 2 - page 19, line 26, Figure 2 and Figure 3).

- 4.2 Document DI therefore presents a solution for the problem of downlink power control of a CDMA base station transmitter by controlling the gain of a variable gain block in front of the power amplifier. The problem still to be solved may be regarded as how to prevent the output signal from being distorted.
- 4.3 Document D2 (the references in parentheses applying to this document) discloses a power control circuit for a transmitter in a CDMA system comprising:

a variable attenuation means capable of controlling an attenuation amount of the modulation signal level in accordance with a value of control signal to be input (see col 2, line 4 1-45 and Figure 2);

an amplification means which amplifies an electric power in order to output the modulation output signal, of which level is controlled by the variable attenuation means, as a transmitter output to the transmission power amplifier (see col 4, line 30-35 and Figure 2);

a comparative control means comparing the transmission mean value provided by the first mean value-calculating means with a predetermined maximum transmission power value (see col 2, line 34-5 1 and Figure 2) and, where the transmission mean value is not more than the maximum transmission power value, outputting a data for supplementing, as the control signal to the "valuable" (=variable) attenuation means, a difference between the transmission mean value and the transmission power mean value provided by the second mean value-calculating means (col. 4, line 54-59 and Figure 2), or where the transmission mean value is more than the maximum transmission power value, outputting a data for supplementing, as the control signal to the "valuable" (=variable) attenuation means, a difference between the maximum transmission power value and the transmission

power mean value (see col. 2 line 34-40 and col. 4, line 65 -col. 5, line 7 and Figure 2).

Document D2 therefore solves the problem of the distortion of the output signal by means of an additional saturation control loop.

A person skilled in the art could be expected to combine the teachings of document D1 and D2 and thus arrive at the solution of claim 4 without an inventive step.

- 4.4 As a consequence claim 4 is not allowable under Article 52(1) EPC for lack of inventive step of its subject-matter.
5. Dependent claims 2 and 3 do not appear to contain any additional features which, in combination with the features of any claim to which they refer, involve an inventive step (Article 56 EPC) since a person skilled in the art would arrive at the solution of these claims by combining the teachings of D1 and D3 (see especially those passages cited in the European search report).
6. Dependent claim 5 does not appear to contain any additional features which, in combination with the features of any claim to which it refers, involve an inventive step (Article 56 EPC) since a person skilled in the art would arrive at the solution of these claim by combining the teachings of D1 and D3 (see especially those passages cited in the European search report).
7. The subject-matter of independent claims 6 and 7 is merely a combination of features from the claims 1 to 5. As the subject-matter of claims 1 to 5 is not inventive claims 6 and 7 also cannot be considered as involving an inventive step (Articles 52(1) and 56 EPC).
8. It is not at present apparent which part of the application could serve as a basis for a new, allowable claim. Should the applicant nevertheless regard some particular matter as patentable the following formal requirements should be met:
 - Reference signs in parentheses should systematically be inserted in all the claims to increase their intelligibility, Rule 29(7) EPC.
 - To meet the requirements of Rule 270 (b) EPC, the documents D1, D2, D3 and D4 should be identified in the description and the relevant background art disclosed therein should be briefly discussed.

- The description must be brought into conformity with the new claims to be filed; care should be taken during revision, especially of the introductory portion including any statements of problem or advantage, not to add subject-matter which extends beyond the content of the application as originally filed, Article 123(2) EPC.
- The applicant should indicate in the letter of reply the difference of the subject-matter of the new claims (in terms of features positively contained in the claim) vis-à-vis the state of the art and the significance thereof.
- Finally, where replacement pages are filed and it is not obvious how the text has been amended, the Applicant is requested to file in addition to the retyped copies, a set of equivalent original pages showing the amendments in handwriting and, where appropriate, to explain in an accompanying letter from which points in the originally filed application the amendments are derived, cf. Guidelines, E-II, 1, last sentence."

The Chinese Office Action issued November 25, 2003, and did not provide any substantive comments with regards to references cited in that Office Action.

Applicant's statements regarding the European and Chinese Office Actions are based on a partial translation that Applicant's representative obtained. These statements should in no way be considered as an agreement by Applicant with, or an admission of, what is asserted in the European and Chinese Office Actions.

Applicant respectfully request that the listed documents be considered by the Examiner and formally be made of record in the present application and that an initialed copy of Form PTO/SB/08 be returned in accordance with MPEP §609.

Respectfully submitted,

February 12, 2004
Date

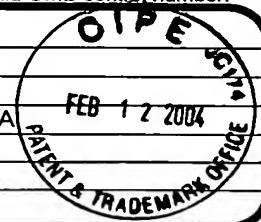
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INFORMATION DISCLOSURE STATEMENT BY APPLICANT					
Date Submitted: February 12, 2004 (use as many sheets as necessary)					
Sheet	1	of	1	Attorney Docket Number	017661-0181



U.S. PATENT DOCUMENTS

Examiner Initials*	Cite No. ¹	U.S. Patent Document		Name of Patentee or Applicant of Cited Document	Date of Publication of Cited Document MM-DD-YYYY	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear
		Number	Kind Code ² (if known)			
A1		5,606,285		WANG et al.	02/25/1997	
A2		5,715,526		WEAVER, JR. et al.	02/03/1998	
A3		5,930,242		MIMURA	07/27/1999	

FOREIGN PATENT DOCUMENTS

Examiner Initials*	Cite No. ¹	Foreign Patent Document			Name of Patentee or Applicant of Cited Documents	Date of Publication of Cited Document MM-DD-YYYY	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear	T ⁶
		Office ³	Number ⁴	Kind Code ⁵ (if known)				
A4	EP	0 751 630				01/02/1997		
A5	PCT	WO 97/09794				03/13/1997		
A6	CN	1208519				02/17/1999		ABS

NON PATENT LITERATURE DOCUMENTS

Examiner Initials*	Cite No. ¹	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.) date, page(s), volume-issue number(s), publisher, city and/or country where published.	T ⁶

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¹ Unique citation designation number. ²See attached Kinds of U.S. Patent Documents. ³Enter Office that issued the document, by the two-letter code (WIPO Standard ST.3). ⁴For Japanese patent documents, the indication of the year of the reign of the Emperor must precede the serial number of the patent document.⁵Kind of document by the appropriate symbols as indicated on the document under WIPO Standard ST. 16 if possible. ⁶Applicant is to place a check mark here if English language Translation is attached.

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